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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/070,479	06/26/2002	Martine Anne Cecile Wettendorff	B45198	4698

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EXAMINER	
SALIMI, ALI REZA	
ART UNIT	**PAPER NUMBER**
1648	

DATE MAILED: 03/10/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/070,479	WETTENDORFF, MARTINE ANNE CECILE	
	Examiner	Art Unit	
	A R Salimi	1648	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on *22 October 2003*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *21-70* is/are pending in the application.

4a) Of the above claim(s) *27-70* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *21-26* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *08 March 2002* is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *3/8/02*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

The Art Unit location of your application in the USPTO has changed. To aid in correlating any papers for this application, all further correspondence regarding this application should be directed to Art Unit 1648.

Election/Restrictions

Applicant's election with traverse of Group I (claims 21-26) in Paper filed 10/22/03 is acknowledged. The traversal is on the ground(s) the unity of invention exists among the various distinct groups and the US Patent No. 5,855,891 does not mention of an adjuvant of any kind. This is not found persuasive because the above cited patent clearly stated in column 8, lines 1-12, that the fusion protein contains "co-immunostimulatory protein", which is broadly interpreted to include adjuvant. The cited evidence proves that the technical feature of Group I does not make a contribution over the prior art. Thus, the claims are not so linked by a special technical feature within the meaning of PCT Rule 13.2; as such the restriction is proper. The requirement is therefore made FINAL.

Claims 27-70 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected groups, the requirement having been traversed in Paper filed 10/22/2003.

Applicant is reminded to cancel the claims to the non-elected claims.

Specification

The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

Claim Rejections - 35 USC § 112

Claims 21-26 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 21 is vague and indefinite for recitation of "a preferential stimulator of TH1", the intended "adjuvant" is/are not defined. In addition, "a preferential" is a relative term and is subject to varied interpretation. This affects the dependent claims.

Claim 26 is vague and indefinite for recitation of " a truncate." The claim is interpreted in light of the specification; however, the specification fails to teach metes and bounds of the intended "truncate."

Claim Rejections - 35 USC § 112

Claims 21-26 are rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for inducing an immune response (antibodies only) against HSV gD and HPV-16 L1 or HPV-16 VLP; HPV-18 L1 or HPV-18 VLP in combination with 3D-MPL; wherein the formulation induced antibodies only, does not reasonably provide enablement for having a vaccine comprising any or all HPV antigens and any and all HSV antigens in combination with an adjuvant in general, or in particular an adjuvant that induces TH1-cell response, that would provide a long term protection against the two vastly different virus, in particular herpes virus which is considered to exhibit latent characteristic. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the invention commensurate in scope with these claims.
The specification teaches that injection of HSV gD + HPV-16 L1 or HPV-18 L1 in combination 3D-MPL to induces antibodies against HSV gD and HPV. But it fails to teach whether the HSV

gD antigen in combination can induce the TH1 cell response. Moreover, Applicant has taken a well known antigen from herpes virus, and a well known structural protein of papillomavirus in combination with a well known adjuvant and has observed antibody response. Yet the scope of claims are directed to any and all antigens structural as well as non-structural antigens that would provide a long term response, the disclosure provides no teaching within the broad scope of the claimed invention. There are no teachings that would indicate whether or not non-structural protein antigens would even induce appropriate neutralizing antibodies that would induce positive response. For example, it is well known that L1 protein of HPV induces strong immune response, however, E7 or E6 do not induce strong immune response, as evidence see post filing evidence teaches that HPV E7 protein is a poor cytotoxic T cell response (Virology, 2002, Vol. 294, pp. 47-59, see the abstract), and yet the claims are directed to fusion of E7 or E6 to any Herpes virus antigen, no such teaching is provided and Applicant in effect is asking others to enable the broad scope of the claimed invention while the applicant receives patent protection. Combination of well-known antigens is not proper teaching within the scope of the claimed invention. This field is considered to be highly unpredictable, absent teaching one of ordinary skill in the art would be forced into undue experimentation to enable the full scope of the claimed invention. The scope of the claims are directed to a vaccine, therefore, in order to enable the invention, a sustained immune response against any or all claimed pathogen(s) by challenging the animal with the said pathogen(s) are required. However, the applicants fail to teach that the combined vaccine composition is able to render the positive results envisioned by the applicant for any challenging experiments.

With regard to an unpredictable field, this does not constitute an adequate disclosure. See Fiers v. Revel (25USPQ2d 1601 at 1606; and also decision by the Federal Circuit with regard to the enablement issues see Genentech Inc. v. Novo Nordisk A/S, 42 USPQ2d 1001-1007). For example, the CAFC stated that "It is the specification, not the knowledge of one skilled in the art that must supply the novel aspects of an invention in order to constitute enablement." (See page 1005 of the decision). This means that the disclosure must adequately guide one of ordinary skill in the art to enable the invention absent undue experimentation. The applicant cannot rely on the knowledge of those skilled in the art to enable the claims without providing adequate teaching. Therefore, considering large quantity of experimentation needed, the unpredictability of the field, the state of the art, and breadth of the claims, it is concluded that undue experimentation would be required to enable the intended claim. Many of these factors have been summarized *In re Wands, 858 F.2d 731, USPQ2d 1400 (Fed. Cir. 1988).*

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claim 1 is rejected under 35 U.S.C. 102(b) as being anticipated by Lowy et al (WO 96/11274).

The broad limitations of the claimed invention are anticipated by the above-cited reference. Lowy et al taught fusion partner of papillomavirus and herpesvirus including co-stimulatory protein (see page 7 lines 25-33).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 21-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lowy et al (US Patent No. 5,855,891) and Chu et al (Journal of Experimental Medicine, 1997, Vol. 186, No. 11, 1623-1631).

Lowy et al taught fusion partner of papillomavirus and herpesvirus (see claim 1, and column 7, lines 57-64). They also taught fusion partner as having co-stimulatory protein (see column 8, lines 5-7). This differs only to the extent that they do not teach adjuvant that would "preferential" stimulator of TH1 response.

Chu et al taught CpG is useful as an adjuvant and particularly the mechanism of action were CpG switches to TH1 immunity (see the abstract). This differs since they didn't teach fusion of HSV and HPV.

Therefore, one of ordinary skill in the art at the time of filing would have been motivated to take the fusion protein taught by Lowy et al and add an adjuvant such as CpG as taught by Chu et al to induce an immune response in a suitable host. More, importantly one of skill in the art at the time of filing in view of the teaching would not have anticipated any unexpected results as none have been provided. Prior art taught the fusion protein wherein HPV and HSV antigens are fused together as taught by Lowy et al. The Chu et al teaching taught CpG switches the immune response to TH1, hence, combination of the references would have been purview to one

of ordinary skill in the art, and at the time of filing one of ordinary skill in the art would not have anticipated any unexpected results. Therefore, the invention as a whole is considered ***prima facie*** obvious absent unexpected results.

Claims 21-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lowy et al (US Patent No. 5,855,891) and Stephenne et al (WO 99/45957).

Lowy et al taught fusion partner of papillomavirus and herpesvirus (see claim 1, and column 7, lines 57-64). They also taught fusion partner as having co-stimulatory protein (see column 8, lines 5-7). This differs only to the extent that they do not teach adjuvant that would "preferential" stimulator of TH1 response.

Stephenne et al taught fusion of hepatitis antigen and herpesvirus antigens as well as addition of adjuvant that is a preferential stimulator of Th1 cell response, including 3D-MPL, CpG (see the abstract, claims 1-6). This only differs since they did not teach fusion of papillomavirus.

Therefore, one of ordinary skill in the art at the time of filing in view of above cited teaching would have been motivated to induce an immunity in a suitable host against both HSV and HPV absent any unexpected results. Each and every element of the claimed invention is taught in the above cited art. Applicants are remained that substituting a hepatitis antigen for a papillomavirus to have slightly different invention than Stephenne et al would have been within the purview of one of ordinary skill in the art, especially given the teaching of Lowy et al where they taught fusion of HSV and HPV would induce suitable immune response. Moreover, given the fact that the Office cannot find any unexpected results, and given the familiarity of one of

skilled in the art with the above cited references, the claimed invention at the time of filing would have been obvious to try and obvious to succeed. The above cited art provided the fusion of HSV and HPV and the suitable antigens to induce immune response. Therefore, the invention as a whole is considered ***prima facie*** obvious absent unexpected results.

No claims are allowed.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to A. R. Salimi whose telephone number is (571) 272-0909. The examiner can normally be reached on Monday-Friday from 9:00 Am to 6:00 Pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, James Housel, can be reached on (571) 272-0902. The Official fax number is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (571 272-1600.

A. R. Salimi

3/7/2004